25X1A

TO: [redacted]
FROM:
SUBJECT: Anscochrome - ABD-4 Dryer Test
25X1A COPIES: [redacted] File

File under 6261/16051-63

May 20, 1964

Project No. 134

OBJECTIVE:

To determine if Anscochrome T-100 can be dried in the ABD-4 dryer.

EQUIPMENT: Morse B-5 wind rewind processor.

PROCEDURE:

1. The necessary Anscochrome chemicals were mixed and stored in 5 gallon glass bottles and stainless steel containers.

2. Prior to running any film through the dryer, it was checked out for mechanical performance.

3. An idler roller and air squeegee assembly was installed between the load spool and the first vacuum capstan on the dryer.

4. The transport speed of the dryer was set to 10 FPM by use of a calibrated tachometer. All subsequent speed adjustments were made in a like manner.

5. Two direct reading RH meters were used in conjunction with all drying tests. One meter was placed in the bottom of the dry cabinet, and one was placed adjacent to the dryer to monitor the ambient RH. Each RH meter and the dry-cabinet temperature was monitored and recorded during each film run. The ambient temperature was 75°F ± 3°F during all tests.

6. With the exception of the last roll of Anscochrome run (Test #6-A, B, C) all film after processing was wound on a load spool while wet, and fed into the dryer from the load station (see attached sketch).

Tests 6A-6C were left on the Morse spool after processing, the spool assembly was put on its side in the Morse final rinse tank (still filled with Anscochrome final rinse) and the film was fed into the dryer from the immersed spool.

7. Prior to running Anscochrome, a roll of B & W (5427), which had been rewound on the Morse B-5 processor for 30 minutes and then soaked over night in water was run in the dryer as follows:

TEST NO. 1

Transport speed 8.05 FPM, dryer recirculation control in closed position, ambient RH 50%, dry box RH 28%, dry box temperature 120°F, with air squeegee off.

TEST NO. 2

Transport speed 8.05 FPM, dryer recirculation control in closed position, ambient RH 50%, dry box RH 28%, dry box temperature 120°F, with air squeegee on. Water was poured on the emulsion side of the film to simulate film coming out of a processor wet section.

TEST NO. 3

All conditions as in test No. 2, except the air squeegee was off. The B & W film was run prior to the Anscochrome in order to assure proper dryer operation and to evaluate conditions under which the color film would be run.

8, Approximately 25 feet of Anscochrome T-100 was partially processed in the Morse B-5 processor using the normal Anscochrome 80° processing chemicals and times. This process was discontinued at the color short stop hardener.

9. Approximately 25 feet of Anscochrome T-100 was processed in the Anscochrome R-1 75° process, which includes a prebath solution.

10. TEST NO. 4

Anscochrome drying test was run as follows:

Transport speed 10 FPM (2 minutes drying time), dryer recirculation control in closed position, ambient RH 37.5%, dry box RH 5%, dry box temperature 107°F, with air squeegee on.

11. TEST #5

Anscochrome test was run as follows:

Transport speed 10 FPM, dryer recirculation control in closed position, ambient RH 44.5%, dry box RH 12%, dry box temperature 110°F, with air squeegee on.

12. 100 feet of Anscochrome was processed in the R-1 75° process.

13. TEST #6-A

Anscochrome test was run as follows:

Film was fed into the dryer as described in procedure, paragraph 6, for this test and #6-B and #6-C.

Transport speed 10 FPM, dryer recirculation control in closed position, air squeegee on.

	Ambient RH	Dry Box RH	Dry Box Temp.
Film entering dry box:	56%	21.5%	110°F
End of film out of dry box:	55%	27%	108.5°F

The dryer was stopped shortly after the film reached the take up station in order to rewind it onto the spool emulsion out. From this point on the film was hand-wound onto the spool emulsion out.

14. TEST #6-B

Transport speed 10 FPM, dryer recirculation control in closed position, air squeegee on.

	Ambient RH	Dry Box RH	Dry Box Temp.
Film entering dry box	53%	10%	120°F
End of film out of dry box	53%	16%	116°F

15. TEST #6-C

Film transport speed 5 FPM (7 minutes drying time), dryer recirculation control half open position (50% recirculation), air squeegee on.

	Ambient RH	Dry Box RH	Dry Box Temp.
Film entering dry box	53%	10%	116.5°F
End of film out of dry box	52%	5%	120°F

RESULTS

1. With the dryer transport speed set for 10 FPM, tachometer readings indicated a speed variation of minus 0.57 FPM and plus 0.25 FPM.

2. TEST #1

The film transport had to be stopped in order to re-align the film due to a splice that hung up in the dry box. The film dried, but this was because the drive was stopped. Physical quality was satisfactory.

3. TEST #2

The film dried satisfactorily. Physical quality was satisfactory.

4. TEST #3

The film did not dry. Physical quality was satisfactory.

5. The first 25 foot length of Anscochrome processed in the Morse B-5 using the normal 80°F Anscochrome procedure was lost, due to most all of the emulsion stripping away from the base. The Anscochrome processed per the R-1 75° procedure exhibited no physical damage.

6. TEST #4

No leader was spliced to the tail end of the 25 foot length of Anscochrome which prevented running the film completely through the dryer. Result was inconclusive.

7. TEST #5

The Anscochrome swelled to approximately 1/32 inch wider than the leader. to which it was spliced causing it to hang up on the dry box air bearing flanges. The flanges were re-adjusted to accommodate this swell. The test result was inconclusive.

8. TEST #6-A

The test film did not dry. There was no physical damage.

9. The dryer was stopped shortly after the film started to wind on the take up spool, since the curl of the emulsion-in film would not wind up correctly. The film was rewound emulsion out by hand for this and subsequent tests.

10. TEST #6-B

The film at the take up was tacky (almost dry). There was no physical damage.

11. TEST #6-C

The film started to dry at the third air bearing after entrance into the dry box, this was evidenced by observing that the film started to curl at this point. The film was dry and without excessive curl at the take up. There was no physical damage.

CONCLUSIONS:

1. The flanges on the dryer air bearings must be readjusted to accommodate the increased width of wet Anscochrome due to swelling.

2. Anscochrome film will not dry in the ABD-4 dryer in its present form unless the dry box temperature is between 115 - 120°F, relative humidity between 5 - 10%, at 5 FPM, using an air squeegee with the dryer set to recirculate 50% of the dry-box air.

FILM LOADING PROCEDURES PROJECT NO. 134

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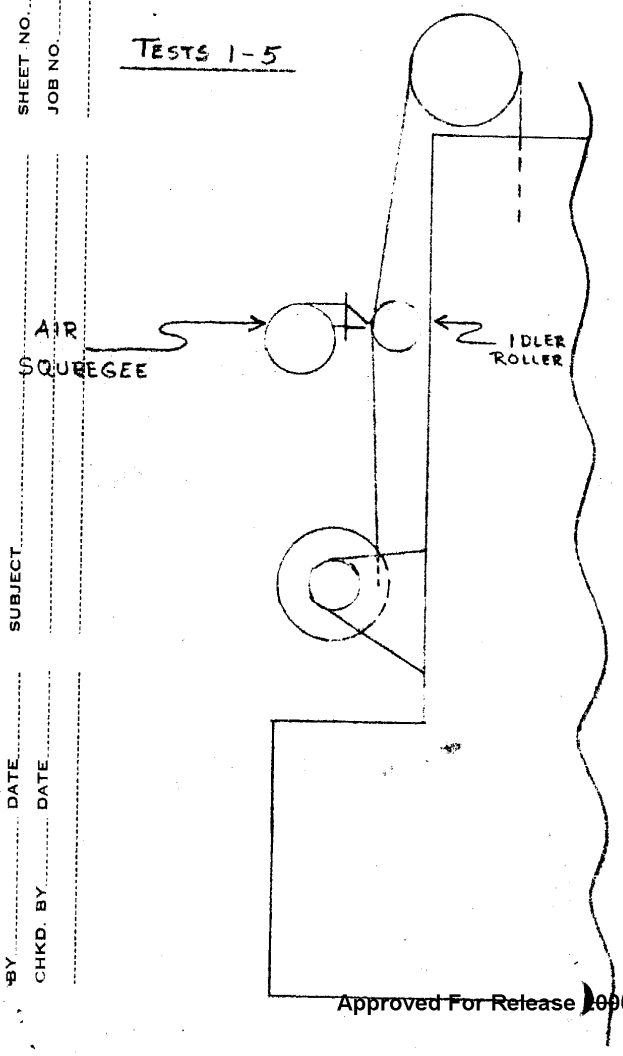
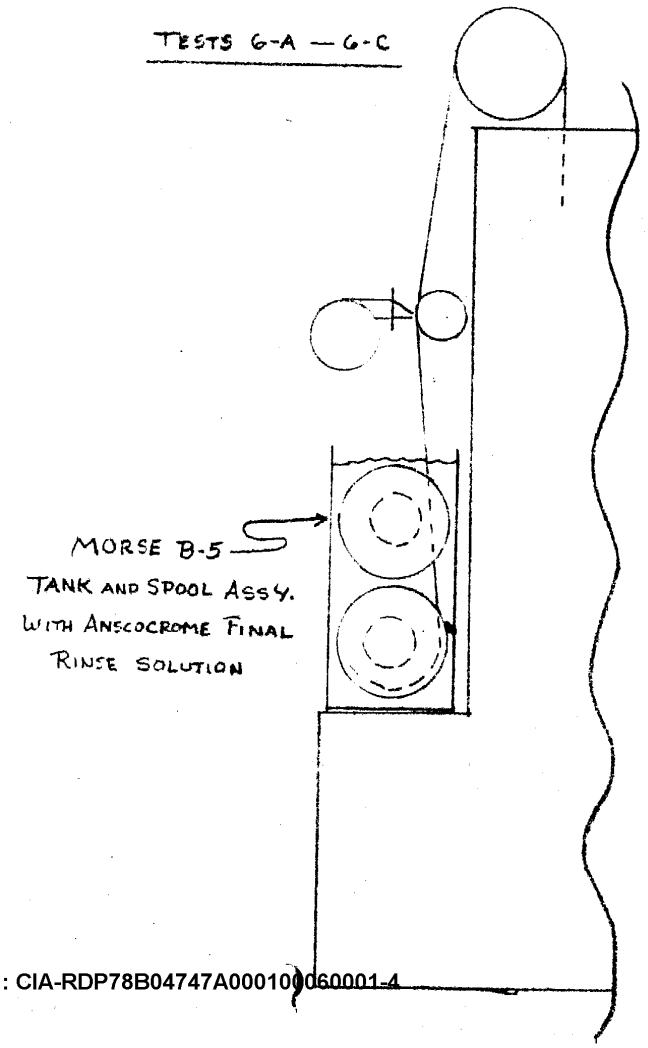
JOB NO. ____
SUBJECT ____
DATE ____
BY ____ DATE ____
CHKD. BY ____

TESTS 1-5



TESTS 6-A — 6-C



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